Notice of Allowability	Application No.	Applicant(s)	
	10/014,834	KASHANI, AHMAD REZA	
	Examiner	Art Unit	
	Corey P. Chau	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *6/28/2006*.

2. ☒ The allowed claim(s) is/are *1-3,6-21 and 25*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Beyer on 9/06/2006.

2. The application has been amended as follows:

Cancel Claims 27-31 and 36.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance: The generally concept of a system for actively damping the low-frequency coloration of sound comprising an electronic feedback controller defining an input coupled to said first signal and an output, wherein said electronic feedback controller is operative to generate said second signal at said output by applying a feedback controller transfer function to said first signal, said feedback controller transfer function comprises a second order differential equation including a first variable representing a predetermined damping ratio and a second variable representing a tuned natural frequency, said second variable representing said tuned natural frequency is selected to be tuned to said at least one mode of low-frequency coloration, said feedback controller transfer function defines a frequency response having a characteristic maximum gain substantially

corresponding to the value of said at least one mode of low-frequency coloration, and wherein said feedback controller transfer function creates a 90 degree phase lead substantially at said at least one mode of low-frequency coloration is well known in the art, as evidence by the references cited. However, the examiner has not found prior art that teaches or suggests alone or in combination a system for actively damping the low-frequency coloration of sound comprising an electronic feedback controller defining an input coupled to said first signal and an output, wherein said electronic feedback controller is operative to generate said second signal at said output by applying a feedback controller transfer function to said first signal, said feedback controller transfer function comprises a second order differential equation including a first variable representing a predetermined damping ratio and a second variable representing a tuned natural frequency, said second variable representing said tuned natural frequency is selected to be tuned to said at least one mode of low-frequency coloration, said feedback controller transfer function defines a frequency response having a characteristic maximum gain substantially corresponding to the value of said at least one mode of low-frequency coloration, said feedback controller transfer function creates a 90 degree phase lead substantially at said at least one mode of low-frequency coloration, said feedback controller transfer function is augmented by the inverse of an acoustic wave actuator transfer function of said acoustic wave actuator to produce an augmented feedback controller transfer function, and said augmented feedback controller transfer function is as follows:

$$\frac{V(s)}{} = G \frac{s^2 + 2\xi_s\omega_s s + \omega_s^2}{}$$

$$P(s) \qquad s^2 + 2\xi\omega_n s + \omega_n^2$$

where the units of V(s) corresponds to said rate of change of volume velocity, P(s) corresponds to the pressure at the location of said acoustic wave sensor and said acoustic wave actuator, s is the Laplace variable, € represents a damping ratio of an acoustic damping controller, €~ represents a damping ratio of said acoustic wave actuator, co~_ is said tuned natural frequency, co, is a natural frequency of said acoustic wave actuator, and G is a gain value.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 7, 2006
CPC

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